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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,994	12/13/2000	Mark Alperovich	109289.00164	9118

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EXAMINER
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ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/674,994	<b>Applicant(s)</b> ALPEROVICH ET AL.	
	<b>Examiner</b> Martin J. Angebrannt	<b>Art Unit</b> 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 October 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-10,12-16 and 19-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) 7 is/are allowed.  
6) ☒ Claim(s) 1,2,4-6,8-10,12-16 and 21-24 is/are rejected.  
7) ☐ Claim(s) 19 and 20 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The response provided by the applicant has been read and given careful consideration.

Responses to the arguments offered by the applicant are addressed after the first rejection to which they are directed. Rejections of the previous office action, not repeated below are withdrawn based upon the arguments and amendments to the claims.

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 54-061541 and Sasaoka JP-59-092448.

JP 54-061541 teaches in each of the three examples on page 3 includes an organic solvent (4 g), a polyvinylbutyral binder (0.36 g), ~7.5 wt% of oxidizing agent chloramine T (0.028g) and 1.5 wt% of a merocyanine dye (0.06 g) coated to a thickness of 50 microns. Other useful oxidizing agents include t-butylhydroperoxide, cumyl peroxide and benzoyl peroxide.

Sasaoka JP-59-092448 teaches the dye of the examples Naphthol Green B with a gelatin binder as the lower layer being decolorized bleached by the action of the benzoyl peroxide in the upper layer containing an acrylic resin as a binder when these layers are heated and mix (abstract).

It would have been obvious to one skilled in the art to modify the invention of JP 54-061541 by placing the oxidizing agent in an adjacent layer as taught by Sasaoka JP-59-092448 with a reasonable expectation of the resultant bilayer being able to record information by

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decolorization based upon the teachings of Sasaoka JP-59-092448 which is old and well known in the art and with a reasonable expectation of the resulting medium being more storage stable due to the oxidizing agent and dye being in separate layers as opposed to adjacent to each other in the same layer.

The applicant asks if the examiner has an English translation of JP 54-061541, the examiner does not at this time and has relied upon an oral spot translation by staff at the PTO. The applicant should have notes in the margin on page 3 of the reference based upon that. The request that the instant action be non-final based upon the reference not being in English is not considered congruent with compact prosecution and the examiner notes that the applicant does not indicate that they have, in the time since this reference was applied in a rejection in the office action of 02/15/2002, made any effort to obtain a translation. JP 54-061541 teaches the amount of dye. The rejection stands.

4 Claims 1,4-6,12,14-16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh et al. EP 812698, in view of Albert et al. '989 and Namba et al. '889.

Katoh et al. EP 812698 teaches in example 1, a microcapsule solution where 2.14 wt% of Azo Dye A-1 (dried layer) is mixed with 2.14 wt% benzoin isobutyl (ether) and incorporated into a PVA solution. (12/30-49). The free radical generating agent is disclosed as discoloring the dyes. (3/57-58). The free radical generating agents include azobisisobutyronitrile (AIBN) (8/49-50). Examples 2,3 are similar, but use different members of the disclosed free radical generating agents. The use of sensitizing dyes is disclosed. (8/40-42). The exposure is in the UV. Using a high pressure mercury lamp (14/45+, 12/17-19).

Albert et al. '989 teaches the use of thiolene complexes to such as those described in DE 3505751 and the tetraphenyl thiolenes shown in table 2 in column 7, which use Ni or Pt as the central metal as light absorbers in the 700-900 nm range in optical recording media.

Namba et al. '889 teaches optical recording media which may use cyanine, phthalocyanine, naphthalocyanine, tetrahydrocholine, tetrahydrocholol, anthroquinone, azo, tripehynlmethane, pyrylium or thiapyrylium dyes (5/21-25). The use of these with various resins including nitrocellulose, vinyl resins, acrylic resins and the like is disclosed. (15/26-18/17). The use of singlet oxygen quenchers to prevent oxygen degradation of the recording layer and improving light resistance is disclosed. (18/18-27/57). The use of nickel tetraphenylthiolene shown as Q2-1 in the table in column 18 is disclosed.

It would have been obvious to one skilled in the art to modify the cited examples by replacing the free radical generating agents specifically used in the examples of Katoh et al. EP 812698 with one of the 15 others specifically exemplified by Katoh et al. EP 812698, such as azobisisobutyronitrile, with a reasonable expectation of forming a useful decolorizing DIP composition and further to add a Ni tetraphenylthiolene to the resulting composition with a reasonable expectation of spectrally sensitizing the free radical generating agents to longer wavelengths and improving the light and oxygen stability of the resulting composition based upon the disclosures of Albert et al. '989 and Namba et al. '889.

The addition of Albert et al. '989 and Namba et al. '889 addresses the issue of the addition of a non-fluorescent dye capable of absorbing laser light and converting it into heat. The applicant asserts that they have discovered that the addition of a non-fluorescent dyes improves the performance of the recording layer, but does not describe how the performance is

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improved. Clearly, the addition of another compound which absorbs the laser wavelength would increase the sensitivity of the medium. This would not be considered surprising at all, particularly in view of the direction toward a sensitizer by Katoh et al. EP 812698 and the disclosed of the benefits of the tetraphenyl thioleues by Namba et al. '889 beyond their absorption properties as discussed by Albert et al. '989.

5        Claims 1,2,4-6,10,12-16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 54-061541, in view of Albert et al. '989 and Namba et al. '889.

It would have been obvious to one skilled in the art to modify the cited examples by replacing the oxidizing agent specifically used in these examples with one of the 12 others specifically exemplified in the lower right paragraph on page 2, such as t-butylhydroperoxide, cumyl peroxide or benzoyl peroxide, with a reasonable expectation of forming a useful decolorizing DIP composition and further to add a Ni tetraphenylthiolene to the resulting composition with a reasonable expectation of spectrally sensitizing the free radical generating agents to longer wavelengths and improving the light and oxygen stability of the resulting composition based upon the disclosures of Albert et al. '989 and Namba et al. '889.

The addition of Albert et al. '989 and Namba et al. '889 addresses the issue of the addition of a non-fluorescent dye capable of absorbing laser light and converting it into heat. The applicant asserts that they have discovered that the addition of a non-fluorescent dyes improves the performance of the recording layer, but does not describe how the performance is improved. Clearly, the addition of another compound which absorbs the laser wavelength would increase the sensitivity of the medium. This would not be considered surprising at all, particularly

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in view of the disclosed of the benefits of the tetraphenyl thiolenes by Namba et al. '889 beyond their absorption properties as discussed by Albert et al. '989.

6 Claims 1,2,4-6,10,12-16 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 54-061541, in view of Albert et al. '989, Namba et al. '889 and Vogel et al. '522, further in view of Santo et al. '233 and Inoue et al. JP 09-286979.

Santo et al. '233 teach in examples 1-4 mix the dye and free radical generating species together in a single layer without a polymer binder. The use of various dyes, including xanthene, azine, cyanine, indigoid, phthalocyanine dyes and other are disclosed. (4/18-35). Useful free radical generating compounds including AIBN, bromobenzene diazohydroxide, benzoyl peroxide, t-dibutyl peroxide, cumene hydroperoxide. (4/45-68). The use of these in amounts of 0.1-50% is disclosed. (3/1-13). The addition of a binder to improve the film forming properties and increasing the stability of the coated layer. (6/6-8). Useful binders including nitrocellulose, cellulose acetate, cellulose acetate butyrate, methyl cellulose, ethyl cellulose, butyl cellulose, vinyl resins, PVA, PVAc, PVB, PVP, acrylates methacrylates and the like are disclosed. (6/25-56). The dissolving or *dispersing* of the dye into an organic solvent, such as alcohols, ketones, amides, sulfoxides, ethers, esters, halogenated alkanes and the like, is disclosed. (6/8-25). The addition of fatty acid soaps of zinc, lead or cadmium; urea or ethanolamine are disclosed as accelerators for free radical degradation of dyes. (5/38-48). The addition of reducing amines, such as dimethylaminoethyl methacrylate, butylamine, triethylamine triethyl-n-butylphosphine and isoamyl-4-dimethylaminobenzoate acts as a sensitizer and prevents oxygen degradation of the recording medium. (5/63-68).

Inoue et al. JP 09-286979 (cited 05/20/05) teaches optically decolorizable compositions where the various free radical generating compounds are used to decolorize various dyes. The disclosed useful dyes include azo, anthraquinone, indigo, triphenylmethane, diphenylmethane, triphenylamine, phthalocyanine, cyanine and others [0014]. These may be used in amounts of 0.1-10% [0016]. The useful free radical generators disclosed include benzophenone, Michler's ketone, etc which may be used with amine accelerators. [0012]. The addition of fatty acid soaps of zinc, lead or cadmium; urea or ethanolamine are disclosed as accelerators for free radical degradation of dyes. [0020].

In addition to the basis above, the examiner holds that it would have been obvious to one skilled in the art to modify the inventions resulting from the combination of JP 54-061541 with Albert et al. '989, Namba et al. '889 and Vogel et al. '522 by adding fatty acid soaps of zinc, lead or cadmium; urea or ethanolamine as accelerators for free radical degradation of dyes and/or reducing amines, such as dimethylaminoethyl methacrylate, butylamine, triethylamine triethyl-n-butylphosphine and isoamyl-4-dimethylaminobenzoate which act as sensitizers and prevent oxygen degradation of the recording medium as taught by Santo et al. '233 and Inoue et al. JP 09-286979 with a reasonable expectation of realizing these effects based upon the similarity of the free radical degradations taught in the references.

The issues raised have been addressed above and no further response is provided here.

8 Claims 1,2,4,10 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 54-061541, in view of Albert et al. '989 and Namba et al. '889, further in view of Glushko et al. '671 and Russell '031.



Glushko et al. '671 teach multilayered optical recording media where fluorescent layers are interspaced with transparent spacer layers. (see figures 9 and 12). Useful fluorescent dyes are disclosed including rhodamine dyes. (11/54-65). The addition of materials including those generating free radicals which bleach the dyes are disclosed. (12/25-35). Example 1 uses a 0.5 microns film or of 2,3,-dimethyl-1,3-diphenyl-5,12-naphthacenequinone in PMMA and pyrolidone. (18/25-29). The use of mixtures of the dissolved dye and an optical laquer is disclosed as forming film thicknesses of 20-30 microns (18/52-64).

Russell '031 teaches the use of UV, visible and IR light with the recording media described. (3/34-38) Figures 4-7 exemplify the case where recording layers are different colored materials, such as photographic film, photoluminescent materials or inks. (5/38-52, 6/45-52, 6/62-7/2 and 7/24-39). The disc shape of the recording media are shown in figures 2 and 3a. These are separated by spacer layers/support materials.

It would have been obvious to use multiple layers of fluorescent recording materials, such as those taught by JP 54-061541 along with optical filtration on the detection to separate the data from the various layers as taught by Glushko et al. '671 and Russell '031 to enable more data to be stored in an single optical disc structure. . Further it would have been obvious to use substrate materials to separate them to prevent mixing during coating.

The issues raised have been addressed above and no further response is provided here.

9 Claim 7 is allowable.

10 Claims 19 and 20 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

**11 THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**12** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

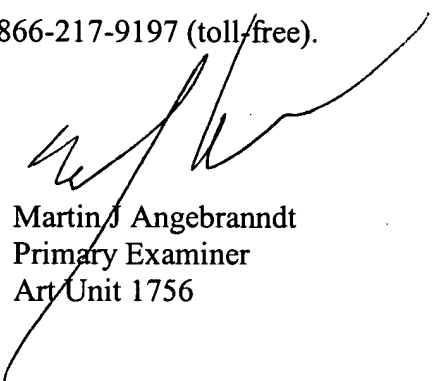
Foley et al. '938 teach metal dithiolenes as light to heat conversion means. (7/11-8/36).

**13** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebranndt  
Primary Examiner  
Art Unit 1756

01/06/2006